

RADIO
NEW JERSEY

WRNJ
AM 1000

11 Nov 87

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MAIL BRANCH

Mr. William J. Tricarico, Secretary
Federal Communications Commission
1919 M Street, N.W. -- Room 222
Washington, D.C. 20554

MM

Re: Comments for Rulemaking ~~MM~~ 87-268 ✓

Dear Mr. Tricarico,

Radio New Jersey hereby submits its comments on Proposed Rulemaking General Docket No. 87 --268.

Enclosed, are an original and five copies. If there are any questions regarding this matter, please contact the undersigned at Radio New Jersey.

Sincerely,

Lawrence J. Tighe, Jr.
Lawrence J. Tighe, Jr.
President

of copies = 0+5

ORIGINAL
FILE
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MAIL BRANCH

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Amendment of Part 73
of the Commission's Rules
Regarding the Allocation
of Spectrum to Advanced
Television Systems

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MM

~~General~~ Docket No. 87-268

COMMENTS OF STATION

WRNJ, RADIO NEW JERSEY, INC.

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SUMMARY OF THE FILING

Radio New Jersey, licensee of station WRNJ AM wishes to make comment in this proceeding on points as they may relate to a proposal for additional UHF frequencies for radio broadcasting. Radio New Jersey has tendered a Request for Rulemaking that would have the unused UHF television frequencies channelized and distributed to certain AM and FM stations which are in dire need of relief.

This request is in concert with the Commission's acknowledgement that those frequencies were available to Land Mobile interests on a shared basis with TV broadcasters. The Commission acceded to such requests when it perceived a Land Mobile spectrum shortage. Thus, the idea of sharing spectrum in the UHF TV band was hatched, and condoned.

Radio New Jersey questions the need for ATV. It further argues that the need for relief by daytime-only, Class IV AM, share-time AM and Class A FM stations is here now and is not perceived. It is real! Presently, there is no indication of public interest in ATV and one is hard-pressed to understand why the Commission is attempting to solve a spectrum problem that is not known to exist.

It is well known, however, that the AM and FM bands are congested and serving the public poorly. Until that problem is solved by the re-assignment of UHF spectrum to radio broadcasting, ATV has no right to consideration.

COMMENTS

1) The Commission notes in its introduction of Inquiry 87-246 that the television industry claims it may be relegated to "second-class status" with "serious implications" for the future of off-air television service to the public. And, because an industry that is already declining due to inroads made by cable and satellite, cries "wolf," the Commission stops issuing licenses in major markets and starts the process of carving up the UHF band for television broadcasters.

2) Just prior to the cry for help, the Commission was about to end the waste of spectrum by allowing Land Mobile to share the otherwise unused frequencies. It was perceived that those frequencies had no other value and therefore it was fine for the Land Mobiles to share them. That made good sense.

3) For years now, the AM broadcast industry has been languishing in technical and economic despair. The same second-class status that the TV industry fears, has long been pushed on AM broadcasters and nothing in the way of massive reblocking of bands was considered. Nine kilohertz spacing had its day. The AM band was extended a few noisy kilohertz and the talk of directional antennas is plaguing the FM band.

4) Section III of the Commission's inquiry requests input on Spectrum Allocation Issues. This is the nexus between radio broadcasters and the instant TV inquiry. Radio New Jersey has filed a Request For Rulemaking requesting shared use of the existing Channels 32

through 34. RNJ has proposed 90 new Channels and a licensing plan that would end, once and for all, the plight of the public served by inferior, noisy low power broadcast facilities. (RNJ's Petition For Rulemaking is attached as appendix A). Shared spectrum made sense to the Commission when Land Mobile demonstrated the need for more spectrum. The idea of shared spectrum for different services proved viable. Radio New Jersey feels that the Commission should place in abeyance any actions that would preclude the use of UHF channels for the relief of already "relegated to second-class" broadcasters. The HDTV need and demand by the TV industry has in no way been demonstrated. High Definition Television could be same hook that held the hat of the Quadraphonic advocates.

5) The Commission has said time and again that the market place is where the economic decisions should be made. Yet, there seems to be a concern for the off-air television industry, inordinately so, that to date, is not supported by public opinion or demand.

6) For years the television industry has used two carriers to carry their program material. This wasteful system could be converted over several years to a single carrier system. By frequency modulating the visual carrier as well as amplitude modulating the same carrier, both the aural and visual information can be carried on the same frequency. The removal of the aural carrier then gives additional bandwidth to the upper sideband of the visual signal. That represents a spectrum and energy savings.

7) Recently, RCA Laboratories has indicated they can accomplish NTSC compatible HDTV within the existing allotted bandwidth. With such developments here and coming, RNJ feels it is premature, to say the least, for the Commission to be handing over spectrum to the perceived needs of the television industry.

8) In paragraph 107 the Commission again remarks on the use of unused spectrum. Here the idea of broadcast-unrelated use by the TV licensee to do as he pleases is proffered. Again the possible use of the frequencies for relief of the above mentioned AM and FM congestion problems shows through, very clearly. Even the Commission agrees in that statement that the HDTV era is not here, if ever. The Commission, apparently expecting a long period if ever for stations to convert to ATV, is obviously aware of the imperceptably slow conversion to stereo TV, the other television panacea.

CONCLUSION

9) In conclusion, Radio New Jersey requests that the Commission not discard our remarks as irrelevant, as reply commenters will suggest. Instead, the Commission should reserve spectrum for the solving of the AM and FM band problems as a part of this inquiry. It has been made crystal clear that the sharing of the spectrum is in the public interest during the Land Mobile quest for space. Surely, if Land Mobile qualifies to share otherwise dedicated broadcasting channels, broadcasters themselves are qualified.

10) The Commission's files are now replete with letters from the public and applications from AM and FM broadcasters requesting relief from the artificial criteria that has allowed the urban areas to grab all the quality spectrum. Now, the same urban area television broadcasters request the spectrum that can reverse the earlier flow of "best" frequencies to the cities. The suburban and rural broadcast facilities are "poor boys" again.

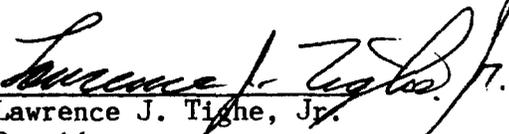
11) The petitioners have not demonstrated in any way the public's desire to watch High Definition TV. The public is more interested in quality programming than it is in quality pictures. These TV broadcasters will succeed or fail based on their program quality not the picture quality. To suggest otherwise would infer the average American viewer is shallow and trinket-oriented.

12 But, the same dedication shown by the Commission to preventing "second-class" status for TV broadcasters can turn around the historic wrong of the urban area monopoly of spectrum. Docket No. 87-246 can end this grab for spectrum and yield relief to the long time second-class broadcasters. Radio New Jersey's request for relief is enclosed as attachment "A."

Respectfully submitted,

Radio New Jersey, WRNJ AM

BY


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APPENDIX A

Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

PETITION OF)
RADIO NEW JERSEY)
FOR ISSUANCE OF A)
NOTICE OF PROPOSED)
RULEMAKING TO) RM-
ALLOCATE SPECTRUM TO)
PROVIDE HIGH)
DEFINITION RADIO)
BROADCASTING SERVICE)
OPPORTUNITIES FOR)
DAYTIME, AM, AND)
CLASS "A" FM STATIONS)

PETITION FOR RULEMAKING

RADIO NEW JERSEY
(Lawrence J. Tighe, Jr.—President)

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Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

PETITION OF)
RADIO NEW JERSEY)
FOR ISSUANCE OF A)
NOTICE OF PROPOSED)
RULEMAKING TO)
ALLOCATE SPECTRUM TO)
PROVIDE ADDITIONAL)
BROADCASTING SERVICE)
OPPORTUNITIES FOR)
AM AND CLASS "A" FM)
STATIONS)

PETITION FOR RULEMAKING

Summary

Radio New Jersey hereby petitions the Commission to reallocate spectrum at 578-596 MHz (TV channels 32,33 and 34) to create by shared use, an additional broadcasting service (HDR --- High Definition Radio) to provide potential relief for the more than 2400 1/ daytime-only and more than 2000 Class "A" FM stations, and others, serving communities throughout the United States. The new HDR service would be a companded FM broadcast service and would permit daytimers, other AM's and Class "A" FM's to operate on a full-time basis at 50 KW ERP, based on 150 meters above average terrain.

1/ See "Report on the Status of the AM Broadcast Rules"
(M.M. Bur. April 3, 1986), p. 66. This staff report is hereinafter referred to as the "AM Report."

This would result in a substantial improvement in service by licensees presently operating daytime-only stations, other AM stations and Class "A" FM stations, and ultimately, improve coverage by full-time AM stations and remaining FM stations through a voluntary reduction in the number of daytimers, other AM stations, and Class "A" FM's.

The purpose of this petition is to provide the Commission with legal and technical bases for finding that: (1) a sharing of the UHF Channels 32-34 for radio broadcasting use is in the public interest; and (2) the public interest requires that the reallocated frequencies be made available to certain AM and Class "A" FM stations pursuant to interim developmental regulatory guidelines.

Radio New Jersey will also be filing an application to construct a full-time HDR broadcasting station on a developmental/experimental basis and for authority to operate that station on Channel 33 in Hackettstown, New Jersey.

I. Introduction

1. Radio New Jersey is the licensee of daytime-only Radio Station WRNJ(AM) on 1000 KHz in Hackettstown, New Jersey. Radio New Jersey has operated WRNJ on a daytime-only basis since it began operations in August 1976, increasing power from 1000 watts to 2500 watts in 1983. WRNJ is authorized to operate two hours past sunset with power levels ranging from 21 watts to 22.3 watts.

2. WRNJ is the only commercial station licensed to Hackettstown ^{2/} (1980 population: 8,850) and it serves the needs and interests of Hackettstown residents by providing daily locally-produced newscasts and public affairs programs. The station also carries local sporting events. WRNJ has become an important part of the Hackettstown community and returned a profit to its owners.

3. Nevertheless, WRNJ has been faced with many of the problems suffered by daytimers throughout the country. Most importantly, of course, WRNJ cannot operate at night. During the evening hours, Hackettstown residents have no commercial radio outlet with a primary service obligation to Hackettstown. Also during those hours, WRNJ cannot offer time to local advertisers, including political candidates. Naturally, this adversely affects WRNJ's profitability and limits the station's ability to raise revenues that would enable the station to expand and improve its coverage of local news stories, production of public service programming, carriage of local sports events, and presentation of entertainment programming. For example, WRNJ is interested in providing live coverage of candidate debates held in the evening, live reports from governmental meetings, and evening news.

^{2/} There is no Docket 80-90 frequency assigned to Hackettstown. A noncommercial college station operates during the school year for approximately 6-8 hours per day.

4. Moreover, WRNJ does not have a consistent operating schedule during the year. While the station is on the air at full power for 19 hours in June, it is on the air at full power for only 10 hours or less in November, December, and January. During the months of September through April, WRNJ loses part of its morning and/or afternoon "drive time" periods of peak listenership.^{3/}

5. As the Commission's staff has recognized, this type of situation produces a serious problem for a station in its efforts to compete for a reasonable share of available revenues during the very period when the largest amount of radio advertising is being placed and has a serious effect on listeners, especially where (as in Hackettstown), the daytime-only station provides the only local service in the community. See AM Report, p. 66. Indeed, the Commission's staff has reached the conclusion that there are "reasons to question the long-term viability of day-time-only stations in today's marketplace." Id., p. 70.

6. Station viability can almost certainly be assured through full time operation on the HDR frequencies. In addition to extending broadcasts throughout the drive time periods, full-time

3/ It has been the experience of Radio New Jersey that the 2-hours of operation under post-sunset authorization are of limited usefulness to WRNJ and its listeners and advertisers because of the very low power levels involved.

operation would allow stations such as WRNJ the opportunity to air weather reports, traffic information, and evening news to the public on their frequencies during a time when they are most needed. Local sports, such as baseball and basketball games would especially benefit by increased coverage during the extended hours. Moreover, the additional hours would enable management to stabilize salaries and staff operations by establishing consistent hours of operation throughout the year. See NAB RadioActive, November 1986, p. 21.

7. The Commissioners have made clear their recognition of the unique disadvantages faced by daytime-only stations, stating that "the Commission has a strong policy to improve the ability of (daytime-only) licensees to obtain expanded service." See Implementation of BC Docket 80-90 (Second Report and Order), 101 FCC 2d 638 (FCC 1985), pp. 13-15.

8. Heretofore, the ideal solution of granting daytimers full power nighttime authorization on their frequencies has not been "seriously contemplated (by the Commission) for general use" because of limitations inherent in the AM band. See AM Report, p. 67. Instead, the Commission has pursued important, but more modest, goals of providing relief to some daytimers in the form of low power pre-sunrise and/or post-sunset operation. See AM REPORT, pp. 67-70.

9. Radio New Jersey recommends an approach to daytimer and other types of AM and Class "A" FM stations that avoids their present limitations and rewards

stations "who have operated their facilities in the public interest in an environment with serious limitations"^{4/} with an opportunity to pioneer radio broadcast service to their communities on a new broadcast band: 578-596 MHz.

II. Allocation of Spectrum
for Station Relief is
in the Public Interest ^{5/}

10. The principal purpose of Radio New Jersey's proposal is to provide a means for effectively implementing: 1) the Commission's mandate to distribute licenses, frequencies, hours of operation, and power among the several states and communities as to provide a fair, efficient, and equitable distribution of radio service to each of the same; and 2) the Commission's strong policy to improve the ability of daytimers to obtain expanded service. See 47 U.S.C. Sec. 307 (b) ; Second Report and Order, supra, p13.

A. Use of the 578-596 MHz Band is a
Highly Efficient Means of Providing
Radio Broadcasting Service

1. Structure of the Service

11. Radio New Jersey proposes a new service that will be audio companded and frequency modulated. The recent technology known as "FMX" could play an major role in this new service. Thus, the name "High Definition Radio-HDR."

4/ See Second Report and Order, supra, p20.

5/ Section II of this petition draws upon and is supported by the attached engineering statement of Clarence M. Beverage (Communications Technologies, Inc., Mt. Holly, New Jersey).

By utilizing companded frequency modulation, the Commission can insure that receiving equipment of the latest technology can be brought to market in the shortest possible time frame. Accordingly, the channel separation, bandwidth and modulation characteristics, have been taken into consideration in this proposal.

12. The proposed new HDR band is located in the UHF portion of the TV spectrum. An examination of present TV assignments indicates that within the 18 MHz there are sufficient unused frequencies in every area of the country to permit HDR coverage of the entire United States and not interfere with any existing licensees. Upon consideration of the HDR band, Radio New Jersey urges the Commission to refuse any further TV applications for Channels 32,33 and 34.

13. The 578-596 MHz band would be broken down into 90 channels 200 KHz in width, as follows:

| <u>Channel</u> | <u>Frequency</u> | <u>Channel</u> | <u>Frequency</u> |
|----------------|------------------|----------------|------------------|
| 301 | 578.1 | 310 | 579.9 |
| 302 | 578.3 | 311 | 580.1 |
| 303 | 578.5 | 312 | 580.3 |
| 304 | 578.7 | 313 | 580.5 |
| 305 | 578.9 | 314 | 580.7 |
| 306 | 578.1 | 315 | 580.9 |
| 307 | 578.3 | 316 | 581.1 |
| 308 | 579.5 | 317 | 581.3 |
| 309 | 579.7 | 318 | 581.5 |

| <u>Channel</u> | <u>Frequency</u> | <u>Channel</u> | <u>Frequency</u> |
|----------------|------------------|----------------|------------------|
| 319 | 581.7 | 356 | 588.1 |
| 320 | 581.9 | 357 | 589.3 |
| 321 | 582.1 | 358 | 589.5 |
| 322 | 582.3 | 359 | 589.7 |
| 323 | 582.5 | 360 | 589.9 |
| 324 | 582.7 | 361 | 590.1 |
| 325 | 582.9 | 362 | 590.3 |
| 326 | 583.1 | 363 | 590.5 |
| 327 | 583.3 | 364 | 590.7 |
| 328 | 583.5 | 365 | 590.9 |
| 329 | 583.7 | 366 | 591.1 |
| 330 | 583.9 | 367 | 591.3 |
| 331 | 584.1 | 368 | 591.5 |
| 332 | 584.3 | 369 | 591.7 |
| 333 | 584.5 | 370 | 591.9 |
| 334 | 584.7 | 371 | 592.1 |
| 335 | 584.9 | 372 | 592.3 |
| 336 | 585.1 | 373 | 592.5 |
| 337 | 585.3 | 374 | 592.7 |
| 338 | 585.5 | 375 | 592.9 |
| 339 | 585.7 | 376 | 593.1 |
| 340 | 585.9 | 377 | 593.3 |
| 341 | 586.1 | 378 | 593.5 |
| 342 | 586.3 | 379 | 593.7 |
| 343 | 586.5 | 380 | 593.9 |
| 344 | 586.7 | 381 | 594.1 |

| <u>Channel</u> | <u>Frequency</u> | <u>Channel</u> | <u>Frequency</u> |
|----------------|------------------|----------------|------------------|
| 345 | 586.9 | 382 | 594.3 |
| 346 | 587.1 | 383 | 594.5 |
| 347 | 587.3 | 384 | 594.7 |
| 348 | 587.5 | 385 | 594.9 |
| 349 | 587.7 | 386 | 595.1 |
| 350 | 587.9 | 387 | 595.3 |
| 351 | 588.1 | 388 | 595.5 |
| 352 | 588.3 | 389 | 595.7 |
| 353 | 588.5 | 390 | 595.9 |
| 354 | 588.7 | | |
| 355 | 588.9 | | |

Class of Station

14. A single class of station would be allowed on these 90 new HDR channels. The power level would be 50 kilowatts with an antenna radiation center 150 meters above average terrain. The 60 dBu (1 mV/m) primary service contour would extend out an average of 28.4 miles from the transmitter site for this combination of ERP and HAAT. Applicants proposing a higher HAAT would be required to reduce the ERP to the extent necessary to bring the 60 dBu contour down to 28.4 miles.

Minimum Distance Separations

15. Radio New Jersey proposes that the interference standards for channels 14 through 69 in Section 73.610 of the Rules be applied to the HDR band. By utilizing similar standards, design problems in transmitting and receiving equipment should be minimized.

16. The new HDR band should have propagation characteristics similar to those for Television Channels 14-69. Accordingly, the propagation curves for those channels would be used for the HDR band. The curves are found in Section 73.699 of the Rules. Figure 106 of that rule section would be utilized for the computation of distance to coverage contours and location of nuisance contours at distances of 10 miles or less. Figure 11 would be used for determining distance to interference contours.

17. Based on these figures, pertinent distance to contours for a maximum facility with an ERP of 50 kilowatts and radiation center 150 meters HAAT would be:

| <u>Contour</u> | <u>Distance in miles</u> | <u>Distance in kilometers</u> |
|----------------|--------------------------|-------------------------------|
| 100 dBu | 3.7 | 5.9 |
| 80 dBu | 12.2 | 19.6 |
| 70 dBu | 20.0 | 32.1 |
| 60 dBu | 28.4 | 45.7 |
| 54 dBu | 39.3 | 63.2 |
| 40 dBu | 77.2 | 124.2 |

Minimum Distance Separation Requirements

Kilometers (Miles)

| <u>Co-channel</u> | <u>200 kHz</u> | <u>400 kHz</u> | <u>600 kHz</u> |
|-------------------|----------------|----------------|----------------|
| 170 (106) | 109 (68) | 65 (40) | 52 (32) |

18. It should be noted that the propagation characteristics on the proposed HDR band give similar coverage, for the proposed power and antenna height combination, as the existing FM band while distance to co and adjacent channel interfering contours is significantly reduced. This allows denser (more efficient) packing of channels without loss of service area.

Minimum Requirements

19. To promote a new and vigorous High Definition Radio FM service from the outset, the minimum ERP allowed in the HDR band would be five kilowatts at a radiation center of 300 feet HAAT or any combination thereof that would place the 60 dBu contour a minimum of 16.5 miles from the proposed transmitter site. Applications for facilities below the maximum would be required to meet the minimum mileage separations specified herein despite the fact that distance to coverage and nuisance contours would be less for these facilities.

SCA and Multichannel Sound Transmission Standards

20. The requirements found in Sections 73.295, 73.297, 73.310 through 73.319, and 73.322 of the Commission Rules would be used for the new HDR service with appropriate corrections for the frequency involved.

2. Technical Benefits of the 578-596 MHz Band

21. Use of the 578-596 MHz band would permit denser and more efficient packing of channels (without loss of service area) than is permissible in the present AM and FM bands. The propagation characteristics of the proposed HDR band give essentially equal coverage (at 50 kw power and 150 meters HAAT) as the existing FM band with a significant reduction in distance to co-channel and adjacent channel interfering contours.

22. A wavelength at 587 MHz (the center of the proposed new band) is 17% of the distance for one wavelength at 100 MHz (the center of the present commercial FM band). The shorter HDR wavelength will allow better signal penetration into buildings. Additional benefits of the shorter wavelength will include lighter, less expensive, and more efficient vertical-only transmitting antennas, higher gain automotive receive antennas, and comparatively wider audio versus RF bandwidth. Moreover, as frequencies increase, the transmitted wave tends

to penetrate through inversion layers, rather than to follow the layer and create interference to services at greater than predicted contours. Thus the new HDR service will be less affected by the following problems faced by users of the present FM band:

1. Ducting or inversion propagation over bodies of water causing interference and loss of service;
2. Lack of signals inside of metal structures;
3. Heavy windloading on supporting structures.
4. Vertical-Only polarizing to further reduce antenna size
(which further eliminates any interference to horizontally polarized TV stations)

23. Operators in the HDR band will also be able to take advantage of the superior characteristics of 578-596 MHz paging when offering services on their subcarriers pursuant to subsidiary communications authorization.

24. Because of the spectral efficiency of the proposed HDR band, the band will also accommodate additional secondary broadcast uses available to all broadcasters on a non-interference basis. Some uses include low power portable remote pickup systems, studio-transmitter links, and transmitter-studio link systems permitting data transfer and remote meter reading. 6/

6/ All secondary users would be required to file a general technical showing demonstrating that the proposed facility would not create prohibited overlap with the primary users of the band. Secondary users would operate between the primary station frequencies to limit interference to the greatest extent possible. A desired to undesired ratio of 20 dB would be used to determine protection requirements to the adjacent primary users.